

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Woods Hole, Massachusetts

Reference No. 53-27

BATHYTHERMOGRAPH DATA

processed, tabulated and filed
during the period

January 1, 1953 - March 31, 1953

Periodic Status Report
Submitted to Geophysics Branch, Office of Naval Research
Under Contract Nonr-683(00)(NR-083-019)

April 1953

APPROVED FOR DISTRIBUTION

182-201-1
Director

According to the terms of Contract Nonr-683(00) (NR-083-019), the Contractor shall furnish the necessary personnel and facilities for and, in accordance with any instructions issued by the Scientific Officer or his authorized representative, shall conduct research in connection with and the processing of bathythermograms.

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Processing of bathythermograph records

During the period January 1 to March 31, 1953, 7,679 bathythermograph records have been received from sources shown in Table 1. The bathythermograph slides are photographed, the positions plotted, and the data copied. The statistics pertaining to the processing are as follows:

Slides photographed	8,148
Prints completed	33,342
Backlog of slides to be photographed	17,629

Tabulation and filing of bathythermograph records and other hydrographic data

During the period 9,307 bathythermograph and station data cards were examined and from each the following information was recorded whenever it could be obtained:

Temperature and salinity at the surface;

Temperature and salinity at 30, 50, 100, 150, 250, 330, 490, 655, 820, and 980 feet;

The depth of the surface layer;

Maximum temperature increase with depth.

These data were distributed in the geographical file in groups classified by months and one-degree squares. The geographical file now contains:

206,097	bathythermograph observations
37,086	hydrographic observations
8,512	surface data cards
<u>2,833</u>	mean surface data cards
254,533	total

All examined data recorded on the bathythermograms have been duplicated on the Hydrographic Office set. The above total of bathythermograms examined this quarter includes only those integrated in the W.H.O.I. files.

Catalog of hydrographic sections in the western North Atlantic

Temperature-depth profiles were drawn for the ATKA cruise, winter of 1952. Area included Greenland to Denmark Strait, Greenland Sea, Norwegian Sea and North Atlantic.

New method of processing BT data.

Work is being done to improve the quality of the prints, eliminate hand copying of multiple prints, and eliminate the expense of reprinting on specific orders.

In the present printing system, the grid and slide are printed directly on photographic paper. This results in a black trace, white grid lines, and gray background. If the slides are perfectly smoked, the prints are legible. However, any variance in the smoking of the slides tends to produce an uneven gray background, against which the white grid lines disappear.

In the plan being considered, the grid and slide will be printed on a negative and then contacted on double-coated photographic paper. This will produce a white trace, black grid lines, and a gray background. The variance in the grayness of the background does not affect the legibility of the print because the grid lines are a very strong black and the traces a dead white.

In the present system the log sheet information is copied by hand on the back of each print. This is the biggest wage and time-consuming step in BT processing.

In the plan being considered the log sheet information will be copied by hand once per slide on a form. This will then be used as a master, and contacted on the reverse side of the photographic paper.

In the present system approximately 2,500 slides are printed monthly, but only 2,000 slides are completely processed.

In the plan being considered the masters would be printed at an estimated rate of 4,000 slides monthly. There would be no holdup in copying. The contact printing process is very fast and could handle the master output very readily.

In the present system the making of extra prints is an expensive problem. Grids, slides, and log sheets must be obtained from the files and new settings must be made. In the plan being considered the masters would be on file and reprinting would then consist of simply contacting the proper masters.

Approximately forty hours of working time has been spent on this project. The major part of the research has been done by Beverly Emery with the assistance of project members and with specific help by Claude Ronne and John Stimpson in the planning and experimental stages.

Personnel

Frederick C. Fuglister (part-time)	Oceanographer
Ethel B. Allen	Junior Technical Assist.
Eileen S. Bergstrom	Senior Technical Assist.
Phyllis R. Bowman	Junior Technical Assist.
Allison E. Chase	Junior Technical Assist.
Harriett H. Crandall	Junior Technical Assist.
Beverly S. Emery	Junior Technical Assist.
Florence E. Glasser	Technical Assistant
Doris M. Holmes	Junior Technical Assist.
Gracie T. Lake	Junior Technical Assist.
Barbara L. Perry	Technical Assistant
Elizabeth H. Schroeder	Senior Technical Assist.
Eloise M. Soderland	Junior Technical Assist.
Evangeline P. Tollios (part-time)	Senior Technical Assist.

TABLE I

<u>Asc. No.</u>	<u>Area</u>	<u>Vessel</u>	<u>Observation Dates</u>	<u>No. of Slides</u>
2063	Off Cape Race to Sta- tion #3A	USCGC HUMBOLDT (W-372)	VII/2/52 VII/26/52	33
2131	Off Virgin Rocks to Station #4B. Return to off Flemish Cap.	USCGC ROCKAWAY (WAVP-377)	VIII/21/52 IX/27/52	151
2132	Off Cape Henlopen to Station #2A and return.	USCGC CHINCO- TEAGUE	VIII/29/52 X/10/52	198
2133	Off Portland to Sta- tion #3A.	USCGC DUANE	VIII/31/52 IX/26/52	127
2134	Off Sable Island to Station #4B. Return to off Virgin Rocks.	USCGC MACKINAC	IX/8/52 X/5/52	118
2135	Off Virgin Rocks to Station #6A and return.	USCGC COOS BAY	IX/15/52 X/9/52	138
2136	Off Portsmouth to Sta- tion #2A and return.	USCGC DEXTER (WAVP-385)	IX/20/52 X/24/52	188
2137	Off Cape May to Sta- tion #3.	USCGC ABSECON	IX/22/52 X/16/52	57
2138	Off Cape May to Sta- #10.	USCGC HUMBOLDT (W-372)	IX/24/52 X/14/52	153
2139	Off Georges Shoal to Station #8A and return	USCGC CASTLE ROCK	X/4/52 X/28/52	87
2140	Off Georges Shoal to Station #6A and return to off Boston.	USCGC HALF MOON (WAVP-378)	X/5/52 XI/3/52	132
2141	Off Norfolk to Station #10.	USCGC MENDOTA	X/16/52 XI/2/52	94
2142	Station #4B.	USCGC CAMPBELL	X/24/52 XI/10/52	89
2143	Off Norfolk to Medi- terranean Sea.	USS VESOLE (DDR-878)	I/24/52 VIII/1/52	82
2144	Woods Hole to Dakar to Recife to Rio.	ATLANTIS	VII/20/52 X/4/52	1112

TABLE I (cont'd.)

<u>Asc. No.</u>	<u>Area</u>	<u>Vessel</u>	<u>Observation Dates</u>	<u>No. of Slides</u>
2145	Rio to Recife to Trini- dad to Bermuda to Woods Hole.	ATLANTIS	X/14/52 XII/14/52	960
2146	Off Norfolk to Medi- terranean. Off Cape Hatteras to Caribbean to Mediterranean Sea.	USS O'HARE (DD-889)	V/15/52 VII/6/52	97
2147	Off New York to North Sea and return.	USS LLOYD THOMAS (DDE-764)	VIII/27/52 XI/24/52	88
2148	Off Key West.	USS M. J. MANUEL	IX/5/52 X/6/52	50
2149	Off Norfolk to Medi- terranean and return.	USS ALCOR (AK-259)	X/4/52 XI/22/52	328
2150	Off Cape Hatteras to Caribbean. Return to Norfolk.	USS MALABAR (AF-37)	XI/14/52 XII/11/52	188
2151	Off Portsmouth to Sta- tion #6A. Return to off Georges Shoal.	USCGG YAKUTAT (WAVP-380)	V/28/52 VI/23/52	59
2152	Off Portsmouth to Sta- tion #3A and return.	USCGC YAKUTAT (WAVP-380)	VIII/11/52 IX/8/52	134
2153	Off Norfolk to Station #8A and return.	USCGC INGHAM	VIII/23/52 IX/22/52	125
2154	Off Georges Shoal to Station #4B and return.	USCGC COOK INLET (WAVP-384)	IX/29/52 X/29/52	129
2155	Off Belle Isle to Sta- tion #3A.	USCGC SPENCER (WPG-36)	X/16/52 XI/8/52	75
2156	Off Georges Shoal to Station #8A.	USCGC McCUL- LOCH (WAVP-386)	X/24/52 XI/16/52	91
2157	Off Portsmouth to Sta- tion #6A and return.	USCGC BARATARIA	X/26/52 XI/25/52	156
2158	Off Boston to Station #2A. Return to north of Virgin Rocks.	USCGC UNIMAK (WAVP-379)	XI/1/52 XII/1/52	120

TABLE I (cont'd.)

<u>Asc. No.</u>	<u>Area</u>	<u>Vessel</u>	<u>Observation Dates</u>	<u>No. of Slides</u>
2159	Off Portsmouth to Sta- tion #10 and return.	USCGC YAKUTAT (WAVP-380)	XI/14/52 XII/10/52	80
2160	North of Flemish Cap to Station #4B and return.	USCGC MATAGORDA (WAVP-373)	XI/14/52 XII/7/52	126
2161	Off Virgin Rocks to Station #2A and return to north of Flemish Cap.	USCGC MACKINAC (WAVP-371)	XI/25/52 XII/21/52	116
2162	Mediterranean Sea to North Sea.	HMS CROSSBOW	II/3/51 IX/17/52	23
2163	Mediterranean Sea to North Sea.	HMS CORUNNA	II/28/51 IX/15/52	27
2164	Off Virgin Rocks to England. Return to off Norfolk.	USS NOA (DD-841)	IV/27/52 XI/5/52	18
2165	Arabian Sea.	HMS WILD GOOSE	V/17/52 X/7/52	39
2166	South of England.	HMS TINTAGEL CASTLE	V/20/52 IX/13/52	12
2167	Off Norfolk to midway to Caribbean Sea.	USS ENGLISH (DD-696)	VI/10/52 VI/27/52	43
2168	North Sea.	HMS SCORPION	VII/2/52 IX/28/52	43
2169	Off southern coast of California. Return to off New York to Caribbean. Return to off Cape Hatteras.	USS TABBERER (DE-418)	VIII/28/52 X/7/52	111
2170	North Sea.	HMS VENUS	X/14/52	1
2171	Off Key West.	ORDNANCE RESEARCH LABORATORY	II/19/52 XI/12/52	100
2172	Off Nassau.	PWSS T.N. GILL	XII/15/52 XII/16/52	47
2173	Off Belle Isle to Sta- tion #3A and return.	USCGC ROCKAWAY	XI/7/52 XI/30/52	110

TABLE I (cont'd.)

<u>Asc. No.</u>	<u>Area</u>	<u>Vessel</u>	<u>Observation Dates</u>	<u>No. of Slides</u>
2174	Off Cape Henlopen to Station #6A.	USCGC INGHAM (WPG-35)	XI/16/52 XII/14/52	67
2175	Off Cape Henlopen to Station #3A and return	USCGC CHINCO-TEAGUE	XI/20/52 XII/24/52	110
2176	Station #10.	USCGC DUANE	XI/24/52 XII/13/52	77
2177	Station #8.	USCGC CHAMBERS	XII/6/52 XII/25/52	84
2178	Station #4B.	USCGC COOS BAY	XII/6/52 XII/27/52	102
2179	South of Cape Race to Station #6A.	USCGC HUMBOLDT (WAVP-372)	XII/10/52 I/2/53	111
2180	Gulf of Mexico	ALASKA	V/29/52 VI/5/52	105
2181	Off Azores to Mediterranean and return to mid-Atlantic.	USS BASILONE (DDE-824)	IX/29/52 XII/2/52	46
2182	Off Charleston to Mediterranean to North Sea.	USS McCAFFERY (DDE-860)	II/29/52 IX/15/52	98
2183	Off Charleston to Caribbean and return.	USS MALABAR (AF-37)	I/12/53 I/30/53	139
2184	Off Georges Shoal to Station #8A.	USCGC BIBB	XI/12/52 XII/7/52	73
2185	Off Belle Isle to Station #3A.	USCGC ANDROS-COGGIN	XII/20/52 I/13/53	74
2186	Off Cape May to Station #8A and return.	USCGC HALF MOON	XII/23/52 I/30/53	166
2187	Station #4B to off Cape Henlopen.	USCGC ABSECON	XII/28/52 I/29/53	97
2188	Station #2A.	USCGC McCULLOCH	I/9/53 I/24/53	68
2189	Off Bermuda.	USS BEATTY (DD-756)	I/8/53 I/10/53	7